Actions for Implementing Agricultural Management Measures in the LMCP Watershed

1. Erosion Control on Cropland

Objective:
Work with land owners/operators to develop and implement the erosion control component of conservation management systems on their cropland to reduce erosion.

Actions:

1. Prioritize sub-watersheds for implementation of management measures for erosion and sediment control
    a. Use IDEM's 303d list of impaired streams to prioritize implementation actions and timelines. Rank from highest to lowest priority the watersheds of streams within the Little Calumet-Galien Watershed that are listed for impaired biotic communities and /or pathogens and have the greatest percentage of row crops within them. Work in the highest priority watersheds first.
2. Identify owners and operators of cropland in the priority sub-watersheds. Give top priority for direct contacts and technical assistance to owners and operators with cropland with soils with slopes of 2% or greater as well as owners and operators of cropland within ½ mile of perennial streams
    b. Use soil maps, aerial photos and FSA records
3. Inform the owners and operators of the special project underway to help protect the coastal waters of Lake Michigan and educate them about technical and financial assistance programs available to assist them with erosion and sediment control
    c. Use district and extension newsletters and partner newsletters (ie: Save the Dunes) and other media information sources
    d. Host information meetings in sub-watersheds based on priority watershed ranking
    e. Conduct direct mailing to all identified landowners and operators
4. One on one contacts with identified owners and operators to develop and implement conservation plans which include erosion control practices based on resource conditions and landowner needs
    a. Begin with owners and operators with cropland on soils with slopes of 2% or greater as well as owners and operators of cropland within ½ mile of perennial streams in the highest priority watershed.
5. Utilize funding from existing agricultural conservation programs such as EQIP, CRP, LARE to provide financial incentives to landowners and operators for implementing erosion and sediment control measures
    a. Request the respective program administrators to make the Little Calumet-Galein Watershed a high priority for program funds
6. Partner with existing agencies and local entities to implement the agricultural component of existing watershed plans or any new ones developed
7. Assure that a monitoring program is being used to asses agricultural nonpoint source contributions over time
    a. Initiate new cropland transect survey of the Little Calumet-Galein Watershed to track conservation tillage adoption

Measure of success:

1. Sub-watersheds prioritized for implementation and action timelines are established for each
2. Key owners and operators are identified and entered into a data base for tracking of progress in contacting and assisting
3. Information meetings held, newsletter articles published, direct mailing completed
4. Number of contacts made and number of conservation plans developed, erosion control practices implemented

5. Amount of cost sharing/incentive funds from existing programs utilized in the Little Calumet-Galein Watershed. Written agreements with agencies that administer existing programs which establish the Little Calumet-Galein Watershed as a high priority area for funding from existing programs
6. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galein Watershed.
7. Monitoring program is in place to access agricultural nonpoint contributions over time. A cropland transect survey is completed and analyzed each summer in Little Calumet-Galein Watershed.

Resources Needed:

1. A map with row cropland overlaying the watersheds of 303d listed streams in the Little Calumet-Galein Watershed and technical staff time to rank the sub-watersheds based on acres of cropland
2. Soil Surveys, aerial photos, access to FSA records and staff time to identify owners and operators and enter into database
3. District, Extension and technical agency personnel time to complete information and education tasks
4. Allocation of time from existing technical agency in local offices plus:
    a. One additional technical person funded through LMCP at $75,000/year including support cost
    b. $100,000 /yr in new funding for cost sharing/incentives for implementing innovative and standard practices in the LMCP area.
5. Cost-sharing/incentive funds from existing agricultural conservation programs
6. Cooperative agreements other agencies and organizations implementing existing or new watershed plans in the LMCP area
7. Personnel time and money to develop and conduct water quality monitoring programs and personnel time to conduct new cropland transect in the watershed

Responsible Entities:

1. Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD), Natural Resource Conservation Service (NRCS) Indiana Dept. of Environmental Management (IDEM)
2. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Farm Service Agency (FSA), Soil and Water Conservation Districts (SWCD)
3. Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension Service (CES), Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation
4. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD)
5. Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD)
6. Indiana Department of Natural Resources (IDNR), Soil and Water Conservation Districts (SWCD)
7. Indiana Department of Environmental Management (IDEM), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Cooperative Extension Service-Purdue University (CES), Soil and Water Conservation Districts (SWCD)

Time line:

1. Complete first year
2. Complete for highest priority watershed in first 18 months, other sub-watersheds based on timeline established by priority for sub-watersheds
3. Initiate within 1 year
4. Initiate within first year, completion 2-3 years, other sub-watersheds based on timeline established by priority for sub-watersheds
5. 1-14 years or until entire area is urban
6. Initiate within first year

7. 1-14 years or until entire area is urban

2. Reduce Wastewater and Runoff from Confined Animal Facilities (Small Units)

Objective:
Work with owners and operators of small confined animal facilities to design and implement animal waste storage and waste utilization systems to reduce the potential for contamination of surface water from animal waste.

Action:

1. Since there are a limited number of confined animal facilities in the Little Calumet-Galien Watershed each SWCD Office will identify and record in a database the owners and operators of confined animal facilities with twenty or more large animal units. Give top priority to owners and operators with confined animal facilities located within ½ mile of perennial streams
    a. Use County Extension's list of livestock producers as a reference source
    b. Local tax records which shows owners who have paid taxes on livestock

2. Inform the owners and operators of the special project underway to help protect the coastal waters of Lake Michigan and educate them about technical and financial programs available to assist them with manure management
    a. Use district and extension newsletters, partner newsletters(ie: Save the Dunes) and other media information sources
    b. Conduct direct mailing to identified landowners and operators
3. One on one contacts with identified owners and operators to access needs, offer conservation planning assistance and where needed develop and implement manure management plans
    a. Begin with owners and operators with confined animal facilities located within ½ mile of perennial streams
4. Utilize funding from existing agricultural conservation programs such as EQIP, CRP, LARE to provide financial incentives to landowners and operators for implementing manure management measures.
    a. Request the respective program administrators to make the Little Calumet-Galein Watershed a high priority for program funds
5. Partner with existing agencies and local entities to implement the agricultural component of existing watershed plans and any ones under development
6. Assure that a monitoring program is being used to asses agricultural nonpoint source contributions over time

Measure of success:

1. Owners and operators with confined animal facilities in each county located within the Little Calumet-Galien Watershed are identified entered into a data base for tracking of contacts and assistance
2. Newsletter articles published, direct mailing completed
3. Number of contacts made and number of conservation plans developed, number of manure management plans developed and implemented
4. Amount of cost sharing/incentive funds from existing programs utilized in the Little Calumet-Galien Watershed. Written agreements with agencies that administer existing programs establishing the Little Calumet-Galein Watershed as a high priority area for funding from existing programs
5. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galien Watershed
6. Monitoring program is in place to access agricultural nonpoint contributions over time. Use notes section of cropland transect survey to track livestock operations in the Little Calumet-Galein Watershed

Resources Needed:

1. County Extension office lists of livestock producers, access to county tax records as well as knowledge of local SWCD board and agency staff. Staff time to identify owners and operators of confined animal facilities and enter information into database
2. District, Extension and technical agency personnel time to complete information and education tasks
3. Allocation of time from existing technical agency in local offices plus:
    a. Technical Service Providers to help write manure management plans
    b. Use of the new funding mentioned under erosion control section for cost sharing/incentives to help address livestock manure runoff concerns
4. Cost-sharing/incentive funds from existing agricultural conservation programs
5. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galien Watershed
6. Personnel time and money to develop and conduct water quality monitoring programs

Responsible Entities:

1. Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension service (CES), Natural Resource Conservation Service (NRCS), Indiana Department of Environmental Management (IDEM)
2. Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension service (CES)
3. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension service (CES)
4. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD)
5. Indiana Department of Natural Resources (IDNR), Soil and Water Conservation Districts (SWCD)
6. Indiana Department of Environmental Management (IDEM), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD) Purdue Cooperative Extension Service(CES)

Time line:

1. Complete first year
2. Initiate within first year continue periodically
3. Initiate within 18 months
4. Initiate within 18 months and complete by 14th year or when area is all urban
5. Initiate first year
6. 1-15 years

3. Reduce Runoff and Leaching of Nutrients Applied to Cropland

Objective:
Work with land owners/operators to develop and implement nutrient management plans to reduce the potential for runoff and/or leaching of nutrients into surface or groundwater.

4. Reduce Runoff and Leaching of Pesticides Applied to Cropland

Objective:
Work with land owners/operators to develop and implement pesticide management plans to reduce the potential for runoff and/or leaching of pesticides into surface or groundwater.

Note: The actions to implement the agricultural management measures and objectives for nutrients and pesticides management (#3 and #4) are the same so they are combined as follows:

Actions:

1. Prioritize sub-watersheds for implementation of management measures for nutrient and pesticide management measures using the same approach used to prioritize sub-watersheds for erosion control.
   a. Use IDEM's 303d list of impaired streams to prioritize implementation actions and timelines. Rank from highest to lowest priority the watersheds of streams within the Little Calumet-Galien Watershed that are listed for impaired biotic communities and/ or pathogens and also have the greatest percentage of row crops within watersheds.
2. Identify owners and operators of cropland in the priority sub-watersheds. Give top priority for direct contacts and assistance to owners and operators with cropland with soils with slopes of 2% or greater, cropland soils that are described as excessively well drained (high potential to leach) as well as owners/operators of cropland within ½ mile of perennial streams
   b. Use soil maps and aerial photos and FSA records
3. Inform the owners and operators of the special project underway to help protect the coastal waters of Lake Michigan and educate them about technical and financial programs available to assist them with nutrient and pesticide management
   a. Use district, Extension and other partnership newsletters (i.e. Save the Dunes) and other media information sources
   b. Host information meetings in sub-watersheds based on priority ranking
   c. Conduct direct mailing to identified landowners and operators
4. One on one contacts with identified owners and operators to do conservation planning to address resource concerns and to determine which owners and/or operators need a nutrient and pesticide plan developed and implemented
   a. Begin with owners and operators with cropland on soils with slopes of 2% or greater and owners and operators of cropland on soils described as excessively well drained (high leach potential) as well as owners and operators of cropland within ½ mile of perennial streams
   b. Use Certified Crop Consultants and other certified Technical Service Providers to work with owners and operators to develop nutrient and pesticide management plans
5. Utilize funding from existing agricultural conservation programs such as EQIP, CRP, LARE to provide financial incentives to landowners and operators for implementing nutrient and pesticide management measures
   a. Request the respective program administrators to make the Little Calumet-Galein Watershed a high priority for program funds
6. Partner with existing agencies and local entities to implement the agricultural component of existing watershed plans and any new ones under development
7. Assure that a monitoring program is being used to asses agricultural nonpoint source contributions over time

Measure of success:

1. Sub-watersheds prioritized for implementation actions and timelines are established for each
2. Key owners and operators are identified entered into a data base
3. Information meetings held, newsletter articles published, direct mailing completed
4. Number of contacts made and number of conservation plans developed, number of nutrient and pesticide management plans developed and implemented

5. Amount of cost sharing/incentive funds from existing programs utilized in the Little Calumet-Galein Watershed. Written agreements with agencies that administer existing programs establishing the Little Calumet-Galein Watershed as a high priority area for funding from existing programs
6. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galein Watershed.
7. Monitoring program is in place to access agricultural nonpoint contributions over time.

Resources Needed:

1. A map with row cropland overlaying the watersheds of 303d listed streams in the Little Calumet-Galein Watershed and technical staff time to rank the sub-watersheds based on acres of cropland
2. Soil surveys, aerial photos, access to FSA records and staff time to identify owners and operators and enter into database
3. District, Extension and technical agency personnel time to complete information and education tasks
4. Allocation of time from existing technical agency in local offices plus:
    a. the services (including funding to cover costs)of Certified Crop Consultants and other certified Technical Service Providers
    b. Use of new funding for cost sharing/incentives for innovative as well as traditional practices as mention under erosion and sediment control section
5. Cost-sharing/incentive funds from existing agricultural conservation programs
6. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galein Watershed
7. Personnel time and money to develop and conduct water quality monitoring programs

Responsible Entities:

1. Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD), Natural Resource Conservation Service (NRCS) Indiana Department of Environmental Management (IDEM),
2. Soil and Water Conservation Districts (SWCD Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation
3. Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension Service (CES), Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation
4. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation districta (SWCD)
5. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Farm Service Agency (FSA), Soil and Water Conservation districts (SWCD)
6. Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD)
7. Indiana Department of Environmental Management (IDEM), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation

Time line:

1. Initiate first year
2. Complete for highest priority watershed in first year, other sub-watersheds based on timeline established by priority for sub-watersheds
3. Initiate within first year
4. Initiate within first 18 months, other sub-watersheds based on timeline established by priority for sub-watersheds
5. 1-14 years or until entire is area is urban
6. Initiate first year

7. 1-15 years or until entire area is urban

5. Improved Grazing Land Management

Objective:

Work with land owners/operators to develop and implement improved grazing land management systems.

Actions:

1. Since there are a limited number of owners and operators with livestock in the in the Little Calumet-Galien Watershed, each SWCD office will identify and record in a database the owners and operators with ten or more large animal units. Give top priority to owners and operators with livestock that have direct access to perennial streams or that are grazing livestock within ½ mile of perennial streams
    a. Use County Extension's list of livestock producers as a reference source
    b. Local tax records which shows owners who have paid taxes on livestock
    c. Utilize knowledge of local SWCD Boards, staff and agency staff

2. Inform the owners and operators of the special project underway to help protect the coastal waters of Lake Michigan and educate them about technical and financial programs available to assist them with livestock exclusion from streams, alternative water supplies and grazing land improvement practices.
    a. Use district, Extension and other partnership newsletters (ie:Save the Dunes) and other media sources
    b. Conduct direct mailing to identified landowners and operators
3. One on one contacts with identified owners and operators to access needs, offer conservation planning assistance and where needed develop and implement grazing land management plans
    a. Begin with owners and operators with livestock with direct access to perennial streams or that are grazing livestock within ½ mile of perennial streams
4. Utilize funding from existing agricultural conservation programs such as GRP, EQIP, CRP, LARE to provide financial incentives to landowners and operators for implementing livestock exclusion, alterative water supplies and grazing land improvement practices
    a. Request the respective program administrators to make the Little Calumet-Galein Watershed a high priority for program funds
    5. Partner with existing agencies and local entities to implement the agricultural component of existing watershed plans and any new ones under development
    6. Assure that a monitoring program is being used to asses agricultural nonpoint source contributions over time

Measure of success:

1. Owners and operators with livestock (10 large animals or more) in each county located within the Little Calumet-Galean Watershed are identified entered into a data base
2. Newsletter articles published, direct mailing completed
3. Number of contacts made and number of conservation plans developed, number of grazing land improvement plans developed and implemented
4. Amount of cost sharing/incentive funds from existing programs utilized in the Little Calumet-Galein Watershed. Written agreements with agencies that administer existing programs establishing the Little Calumet-Galein Watershed as a high priority area for funding from existing programs
5. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galein Watershed
6. Monitoring program is in place to access agricultural nonpoint contributions over time.

Resources Needed:

1. County Extension office lists of livestock producers, access to county tax records as well as knowledge of local SWCD board and agency staff. Staff time to identify owners and operators with livestock (10 large animals or more) and enter information into database
2. District, Extension and technical agency personnel time to complete information and education tasks
3. Allocation of time from existing technical agency in local offices plus:
   a. Time of NRCS Grazing land Specialists to help grazing land improvement plans
   b. Use of the new funding for cost sharing/incentives for innovative as well as traditional practices as mentioned under erosion control section
4. Cost-sharing/incentive funds from existing agricultural conservation programs
5. Cooperative agreements with other agencies and organizations working to address agricultural nonpoint source concerns in the Little Calumet-Galein Watershed
6. Personnel time and money to develop and conduct water quality monitoring programs

Responsible Entities:

1. Soil and Water Conservation Districts (SWCD), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Purdue Cooperative Extension service (CES), Natural Resources Conservation service (NRCS), Indiana Department of Environmental Management (IDEM)
2. Soil and Water Conservation Districts (SWCD), Purdue Cooperative Extension Service (CES), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Natural Resource Conservation Service (NRCS)
3. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Soil and Water Conservation Districts (SWCD)
4. Natural Resource Conservation Service (NRCS), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation, Farm service Agency (FSA), Soil and Water Conservation Districts (SWCD)
5. Indiana Department of Natural Resources (IDNR), Soil and Water Conservation districts (SWCD)
6. Indiana Department of Environmental Management (IDEM), Indiana Department of Natural Resources (IDNR)-Div. of Soil Conservation

Time line:

1. Complete first year
2. Initiate within first year continue periodically
3. Initiate within first 18 months
4. 1-14 years or until entire area is urban
5. Initiate first year
6. 1-15 years or until entire area is urban